

Listing of the Claims

The following listing of claims will replace all prior versions and listings of the claims in the application:

1. (currently amended) A method for determining an endpoint for a main etch of etching a layer, comprising:

selecting a main etch endpoint; and, during the main etch,
directing radiant energy at two or more wavelengths directly onto a layer to be etched;
detecting a last intensity maximum reflected from the layer at a first wavelength prior to the selected etch endpoint; and
detecting an intensity maximum reflected at a second wavelength first occurring after the last intensity maximum at the first wavelength wherein the intensity maximum reflected at the second wavelength occurs before breakthrough to an underlying material.
2. (original) The method of claim 1 wherein the first wavelength is longer than the second wavelength.
3. (original) The method of claim 1 wherein at least two interference maxima occur at the first wavelength during the etch.
4. (original) The method of claim 1 wherein the layer comprises a material that is at least partially transparent to both the first wavelength and the second wavelength.

5. (original) The method of claim 1 wherein the layer comprises a polysilicon material.

6. (currently amended) The method of claim 1 wherein the main etch endpoint is taken as being at the intensity maximum reflected at the second wavelength first occurring after the first intensity maximum at the first wavelength.

7. (currently amended) The method of claim 1 wherein the main etch endpoint is taken as being at a point an interval later than the intensity maximum reflected at the second wavelength first occurring after the first intensity maximum at the first wavelength.

8. (currently amended) A method for determining an endpoint for a main etch of etching a layer having an initial thickness, comprising steps of, during the main etch, directing radiant energy at three or more wavelengths directly onto the layer to be etched;

selecting first, second, and third wavelengths;

selecting an etch rate from a time interval between a first detected intensity minimum and an adjacent intensity maximum reflected at the third wavelength, and selecting a main etch endpoint based on the initial thickness of the layer and the selected etch rate;

detecting a last intensity maximum reflected at the first wavelength prior to the selected etch endpoint; and

detecting an intensity maximum reflected from the layer at the second wavelength first occurring after the last intensity maximum at the first wavelength wherein the intensity maximum reflected at the second wavelength occurs before breakthrough to an underlying material.

9. (original) The method of claim 8 wherein the first wavelength is longer than the second wavelength.

10. (original) The method of claim 8 wherein at least two interference maxima occur at the first wavelength during the etch.

11. (original) The method of claim 8 wherein the layer comprises a material that is at least partially transparent to both the first wavelength and the second wavelength.

12. (original) The method of claim 8 wherein the layer comprises a polysilicon material.

13. (currently amended) The method of claim 8 wherein the main etch endpoint is taken as being at the intensity maximum reflected at the second wavelength first occurring after the first intensity maximum at the first wavelength.

14. (currently amended) The method of claim 8 wherein the main etch endpoint is taken as being at a point an interval later than the intensity maximum reflected at the second wavelength first occurring after the first intensity maximum at the first wavelength.

15. (original) The method of claim 8 wherein third wavelength is shorter than the first wavelength and longer than the second wavelength.